UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/796,567	GIANNAKIS ET AL.
	Examiner	Art Unit
	Juan A. Torres	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 March 2004</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,5,11-13,16,20-22,24,25,31-33,40 and 41</u> is/are rejected.

7)☒ Claim(s) <u>4,6-10,14,15,17-19,23,26-30 and 34-39</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 March 2004</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>09/27/04 and 03/24/05</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20070425

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements (IDSs) submitted on 09/27/2004 and

03/24/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the

information disclosure statements are being considered by the examiner.

Regarding information disclosure statement (IDS) submitted on 09/27/2004,

reference numbers 21 and 43 (see left column) have been modified with what seems to

be the appropriate date of publication; and reference 31 has been deleted because it is

identical to reference 3.

Regarding information disclosure statement (IDS) submitted on 03/24/2005,

reference number 65 (see left column) has been modified with what seems to be the

appropriate date of publication; and reference number 82 has not been considered

because doesn't include a date.

Drawings

The drawings are objected to because:

a) Figures 12-17 are unreadable. It is requested to send new figures that can be

read;

b) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: "23" (see figure 3); "35" (see figure 4); "54" (see figures 6, 7 and 8); "65"

(figure 9); and

c) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they do not include the following reference sign(s) mentioned in the

description: "33" (see paragraph [0069]); "52" (see paragraph [0074], [0075], [0076] and

[0077]); "33" (see paragraph [0069]); "67" (see paragraph [0078]) .   .

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract

on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because not exceed 150 words in length. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

a) The recitation in page 5 "[0025] FIG. 7 illustrates the second step of the data-aided timing synchronization of FIG. 7. [00261 FIG. 8 illustrates the third step of the data-aided timing synchronization of FIG. 7" is improper because a figure can not make reference to itself; it seems that the appropriate will be to be changed to "[0025] FIG. 7 illustrates the second step of the data-aided timing synchronization of FIG. 6. [00261 FIG. 8 illustrates the third step of the data-aided timing synchronization of FIG. 6"; and

b) The recitation in page 12 paragraph [0049] line 7 "unit 16" seems to be improper (see paragraph [0046]); it is suggested to be changed to "unit 14".

Appropriate correction is required.

Claim Objections

Claim 17 is objected to because of the following informalities: the recitation in lines 1-2 of claim 17 "The method of claim 15, n determines the resolution of the estimate of the timing offset" is improper, because is not properly constructed (see claim

18); it is suggested to be changed to "The method of claim 15, <u>wherein</u> n determines the resolution of the estimate of the timing offset" (emphasis added).

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation "n is equal to one of an integer value and a non- integer value" doesn't further limit the parent claim, claim 15 already indicates that "$n \in [0, N_f - 1]$".

Claim 29 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation "n is equal to one of an integer value and a non- integer value" doesn't further limit the parent claim, claim 26 already indicates that "$n \in [0, N_f - 1]$".

Claim 38 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation "n is equal to one of an integer value and a non- integer value" doesn't further limit the parent claim, claim 35 already indicates that "$n \in [0, N_f - 1]$".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation "$\hat{R}_{xx}(n)$" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation "$\hat{n}_\varepsilon T_f$" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Examiner NOTES:

a) it seems that claim 16 should depend from claim 15 that includes this value, and claims 17-19 should depend from claim 16 (see claims 6-10, 26-30 and 35-39);

b) it seems that claim 40 should depend from claim 39 that includes these values.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 11-13, 24, 25, 31-33, and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoctor (US 20030198212 A1) (with Fleming ("Rapid Acquisition for Ultra-Wideband Localizers," 2002 IEEE Conference on Ultra Wideband Systems and Technologies, Baltimore, MD, pp. 245-249, May 21-21, 2002) reference number 36 of IDS for inherency).

Regarding claim 1, Hoctor discloses processing a data stream of information-bearing symbols to form bursts of information symbols (figure 2 paragraph [0024]); arranging training symbols within the stream of information-bearing symbols to ensure one polarity transition within three training symbols at a receiver to synchronize timing of a transmitter and the receiver (abstract, paragraphs [0001], the TR used pilot pulses that are training symbols incorporated by reference is 09/753,443 published as US 20010053175 A1 that in figure 1 shows a doublet and in paragraph [0055] that the pulses in a doublet as opposite polarity this implies one polarity transition within three training symbols, see Fleming ("Rapid Acquisition for Ultra-Wideband Localizers," 2002 IEEE Conference on Ultra Wideband Systems and Technologies, Baltimore, MD, pp. 245-249, May 21-21, 2002) reference number 36 of IDS figures 2a and 2b for inherency); and outputting the bursts of information-bearing symbols and training symbols as an ultra wideband (UWB) waveform through a communication channel to the receiver (abstract paragraph [0008], figure 1 and 2 paragraphs [0023]-[0024]).

Regarding claim 2, Hoctor discloses claim 1, Hoctor also discloses arranging the training symbols further comprises inserting K training symbols within each burst of information-bearing symbols (figure 2 paragraphs [0023]-[0024]).

Regarding claim 3, Hoctor discloses claim 2, Hoctor also discloses inserting the K training symbols as the first K symbols of each burst (figure 2 paragraphs [0023]-[0024]).

Regarding claim 5, Hoctor discloses receiving an ultra wideband (UWB) waveform through a wireless communication channel, where the received UWB waveform comprises bursts of information-bearing symbols (figure 8 block 81 paragraph [0034]); selecting a template to be used for estimating the timing offset of a burst of the received UWB waveform, where the template comprises a segment of a burst of the received UWB waveform (abstract, paragraph [0008], figures 1 and 2 paragraphs [0023]-[0024], and figure 8 paragraph [0034]); correlating the template with a segment of a burst of the received waveform so as to form an estimate of the timing offset of the received UWB waveform (abstract, paragraph [0008], figures 1 and 2 paragraphs [0023]-[0024], and figure 8 block 83 paragraph [0034]); and outputting a stream of symbol estimates in accordance with the estimated timing offset (abstract paragraph [0008], figure 11 paragraph [0038]).

Regarding claim 11, Hoctor discloses claim 5, Hoctor also discloses that the received UWB waveform comprises bursts of information-bearing symbols and training symbols, where the training symbols are arranged so as to ensure one polarity transition within three training symbols (abstract, paragraph [0001], the TR used pilot

pulses that are training symbols incorporated by reference is 09/753,443 published as

US 20010053175 A1 that in figure 1 shows a doublet and in paragraph [0055] that the

pulses in a doublet as opposite polarity this implies one polarity transition within three

training symbols, see Fleming ("Rapid Acquisition for Ultra-Wideband Localizers," 2002

IEEE Conference on Ultra Wideband Systems and Technologies, Baltimore, MD, pp.

245-249, May 21-21, 2002) reference number 36 of IDS figures 2a and 2b for

inherency); where the template to be used for estimating the timing offset of a burst of

the received UWB waveform comprises a segment from a burst of the received UWB

waveform, where the template is selected from the training symbols (abstract,

paragraph [0008], figures 1 and 2 paragraphs [0023]-[0024], and figure 8 paragraph

[0034]); correlating the template with a segment of a burst of the received waveform so

as to form an estimate of the timing offset of the received UWB waveform, where the

segment comprises a segment of one symbol duration from a burst of the received

UWB waveform (abstract, paragraph [0008], figures 1 and 2 paragraphs [0023]-[0024],

and figure 8 block 83 paragraph [0034]); and outputting a stream of symbol estimates in

accordance with the estimated timing offset (abstract paragraph [0008], figure 11

paragraph [0038]).

Regarding claim 12, Hoctor discloses claim 11, Hoctor also discloses that the

training symbols are the first K symbols of each burst (figure 2 paragraphs [0023]-

[0024]).

Regarding claim 13, Hoctor discloses claim 12, Hoctor also discloses that K

training symbols within each burst of symbols are arranged so as to ensure at least one

polarity transition within one symbol duration of the received UWB signal (abstract,

paragraphs [0001], the TR used pilot pulses that are training symbols incorporated by

reference is 09/753,443 published as US 20010053175 A1 that in figure 1 shows a

doublet and in paragraph [0055] that the pulses in a doublet as opposite polarity this

implies one polarity transition within three training symbols, see Fleming ("Rapid

Acquisition for Ultra-Wideband Localizers," 2002 IEEE Conference on Ultra Wideband

Systems and Technologies, Baltimore, MD, pp. 245-249, May 21-21, 2002) reference

number 36 of IDS figures 2a and 2b for inherency).

Regarding claim 24, Hoctor discloses an antenna to receive an ultra wideband

(UWB) waveform through a wireless communication channel, where the received UWB

waveform includes bursts of information-bearing symbols (figure 8 block 81 paragraph

[0034]); a timing synchronization unit to form an estimation of a timing offset based on

the received UWB waveform (figure 8 block 86 paragraph [0034]; see also US

20030198308 A1 included by reference figure 2 block 25 paragraph [0027]); and a

symbol detector to output a stream of estimate symbols based on the estimate of the

timing offset (figure 8 block 86 paragraph [0034]; see also US 20030198308 A1

included by reference figure 2 block 25 paragraph [0027]).

Regarding claim 25, Hoctor discloses claim 24, Hoctor also discloses selecting a

template where the template comprises a segment of a burst of the received UWB

waveform (figure 8 block 86 paragraph [0034]; see also US 20030198308 A1 included

by reference figure 2 block 25 paragraph [0027]); and correlates the template with a

segment of a burst of the received waveform so as to form an estimate of the timing

offset of the received UWB waveform (figure 8 block 86 paragraph [0034]; see also US

20030198308 A1 included by reference figure 2 block 25 paragraph [0027]).

Regarding claim 31, Hoctor discloses claim 24, Hoctor also discloses that

the antenna receives a UWB waveform comprising bursts of information-beating

symbols and training symbols (abstract, paragraph [0001], the TR used pilot pulses that

are training symbols incorporated by reference is 09/753,443 published as US

20010053175 A1 that in figure 1 shows a doublet and in paragraph [0055] that the

pulses in a doublet as opposite polarity this implies one polarity transition within three

training symbols, see Fleming ("Rapid Acquisition for Ultra-Wideband Localizers," 2002

IEEE Conference on Ultra Wideband Systems and Technologies, Baltimore, MD, pp.

245-249, May 21-21, 2002) reference number 36 of IDS figures 2a and 2b for

inherency); where the timing synchronization unit selects a template, where the

template comprises a segment of a burst from the training symbols of the received UWB

waveform and correlates the template with a segment of a burst from the training

symbols of the received waveform so as to form an estimate of the timing offset of the

received UWB waveform (abstract, paragraph [0008], figures 1 and 2 paragraphs

[0023]-[0024], and figure 8 paragraph [0034]; see also US 20030198308 A1 included by

reference figure 2 block 25 paragraph [0027]); and where the symbol detector outputs a

stream of estimate symbols based on the estimate of the timing offset (abstract

paragraph [0008], figure 11 paragraph [0038]; see also US 20030198308 A1 included

by reference figure 2 block 25 paragraph [0027]).

Regarding claim 32, Hoctor discloses claim 31, Hoctor also discloses that the

training symbols are the first K symbols of each burst (figure 2 paragraphs [0023]-

[0024]).

Regarding claim 33, Hoctor discloses claim 31, Hoctor also discloses that K

training symbols within each burst of symbols are arranged so as to ensure at least one

polarity transition within one symbol duration of the received UWB signal (abstract,

paragraphs [0001], the TR used pilot pulses that are training symbols incorporated by

reference is 09/753,443 published as US 20010053175 A1 that in figure 1 shows a

doublet and in paragraph [0055] that the pulses in a doublet as opposite polarity this

implies one polarity transition within three training symbols, see Fleming ("Rapid

Acquisition for Ultra-Wideband Localizers," 2002 IEEE Conference on Ultra Wideband

Systems and Technologies, Baltimore, MD, pp. 245-249, May 21-21, 2002) reference

number 36 of IDS figures 2a and 2b for inherency).

Regarding claim 41, Hoctor discloses a transmitter that processes a data stream

of symbols to form bursts of information-bearing symbols and generates an ultra

wideband (UWB) waveform through a wireless communication channel (abstract,

figures 1 and 2 paragraphs [0008] and [0023]-[0024]; see also US 20010053175 A1

included by reference figure 6 paragraph [0042]); and a receiver that receives the

transmitted signal through a wireless communication channel, selects a segment of the

received UWB waveform to use as a template, forms an estimate of the timing offset

based on the correlation of the template with the received UWB waveform, and outputs

a stream of estimate symbols based on the estimate of the timing offset (abstract,

paragraph [0008], figures 1 and 2 paragraphs [0023]-[0024], and figure 8 paragraph

[0034]; see also US 20030198308 A1 included by reference figure 2 block 25 paragraph

[0027]); and where the symbol detector outputs a stream of estimate symbols based on

the estimate of the timing offset (abstract paragraph [0008], figure 11 paragraph [0038];

see also US 20030198308 A1 included by reference figure 2 block 25 paragraph

[0027]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Miao (US 6744832 B2) in view of Hoctor (US 20030198212 A1).

Regarding claim 20, Miao discloses a pulse generator that processes a data

stream of information bearing symbols to form bursts of information bearing symbols

and arranges symbols within the stream of information-bearing symbols (figure 3 block

30 column 3 lines 1-40); and a pulse shaping unit that outputs an ultra wideband (UWB)

transmission waveform from the bursts of information-bearing symbols (figure 3 block

34 column 3 lines 1-40). Miao doesn't specifically disclose that the UWB transmission

signal includes training symbols. Hoctor discloses that the UWB transmission signal

includes pilot pulses used as training symbols (abstract; paragraph [0008], figures 1 and

2 and paragraphs [0023]-[0024]), and arranging training symbols within the stream of

information-bearing symbols to ensure one polarity transition within three training

symbols at a receiver to synchronize timing of a transmitter and the receiver (abstract,

paragraphs [0001], the TR used pilot pulses that are training symbols incorporated by

reference is 09/753,443 published as US 20010053175 A1 that in figure 1 shows a

doublet and in paragraph [0055] that the pulses in a doublet as opposite polarity this

implies one polarity transition within three training symbols, see Fleming ("Rapid

Acquisition for Ultra-Wideband Localizers," 2002 IEEE Conference on Ultra Wideband

Systems and Technologies, Baltimore, MD, pp. 245-249, May 21-21, 2002) reference

number 36 of IDS figures 2a and 2b for inherency). Miao and Hoctor are analogous art

because they are from the same field of endeavor of UWB communications. At the time

of the invention, it would have been obvious to a person of ordinary skill in the art to

incorporate in the process disclosed by Miao the pilot pulses disclosed by Hoctor. The

suggestion/motivation for doing so would have been to reduce the complexity of the

receiver (Hoctor abstract).

Regarding claim 21, Miao and Hoctor disclose claim 20, Hoctor also discloses

that the pulse generator arranges K training symbols within each burst of information-

bearing symbols (figure 2 paragraphs [0023]-[0024]). Miao and Hoctor are analogous

art because they are from the same field of endeavor of UWB communications. At the

time of the invention, it would have been obvious to a person of ordinary skill in the art

to incorporate in the process disclosed by Miao the pilot pulses disclosed by Hoctor.

The suggestion/motivation for doing so would have been to reduce the complexity of the

receiver (Hoctor abstract).

Regarding claim 22, Miao and Hoctor disclose claim 21, Hoctor also discloses that the pulse generator arranges the K training symbols as the first K symbols of each burst (figure 2 paragraphs [0023]-[0024]). Miao and Hoctor are analogous art because they are from the same field of endeavor of UWB communications. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the process disclosed by Miao the pilot pulses disclosed by Hoctor. The suggestion/motivation for doing so would have been to reduce the complexity of the receiver (Hoctor abstract).

Allowable Subject Matter

Claims 4, 6-10, 14, 15, 17-19, 23, 26-30, 34 and 35-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and the above objections are overcome.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
04-26-2007